

#. (Field) Presenter	Poster Title
1. (C) Christopher R. Kinsinger	Computational Studies of Mechanisms of Peptide-Ion Fragmentation
2. (C) Mary Bedner	Transformations of Pharmaceutical Compounds by Chlorination Processes
3. (C) Nathan G. Dodder	Analysis of Three Hexabromocyclododecane (HBCD) Isomers by C <sub>30</sub> Liquid Chromatography and Tandem Mass Spectrometry
4. (E) Bala Muralikrishnan	Metrology of Small Holes and Micro Features
5. (P) W. Casey Uhlig	Nanoscale SEMPA measurements of trapped domain walls in thin film NiFe constrictions
6. (M) Thomas H. Epps, III	Ordered Network Phases in Linear Poly(Isoprene-b-Styrene-b-Ethylene Oxide) Triblock Copolymers
7. (P) K. Siegrist	THz Spectroscopy of Small Polypeptides
8. (M) Elizabeth A. Wilder	High-throughput modulus measurements for screening of dental materials
9. (M) Kristen S. Wilson	Interphase structure-property relationships in dental nanocomposites
10. (C) Chad Y. Sheng	Chemical Characterization of Aerosol Particles in a Heptane Flame
11. (C) Matthew J. Vergne	Mass Spectrometry Studies on the Reproducibility of Protein Digestion
12. (B) Mihaela Mihailescu	Neutron diffraction in membrane research. The Advanced Neutron Diffractometer/Reflectometer
13. (C) Katrice A. Lipka	Molecular Simulation of Alkylsilane Stationary Phases in Liquid Chromatography
14. (B) Dennis P. McDaniel	Rigidity of collagen fibers affects smooth muscle cell morphology
15. (B) Gokhan Caliskan	Folding mechanism of <i>Azoarcus</i> Intron Ribozyme
16. (P) Jason N. Crain	End States in One-Dimensional Atom Chains
17. (E) Michael Souryal	Ad Hoc Wireless Networks: Channel-Adaptive Protocols for Exploiting Spatial Diversity
18. (P) Guangjun Cheng	Synthesis, Characterization and manipulation of Magnetic Nanoparticles
19. (C) Joseph E. Curtis	Computational Chemistry and Neutron Scattering of Biological and Materials Systems
20. (C) Samuel B. Howerton	Standard Reference Materials Derived from <i>Ginkgo biloba</i>
21. (C) Aric Opdahl	Single stranded (ss) DNA Brushes with Grafting Density Controlled by Adenine Nucleotide Adsorption on Gold

Fields: Biotech/Biol (B), Chem (C), Eng (E), Matls Sci (M), Phys (P), Math/Stat (MS)

#. (Field) Presenter	Poster Title
22. (P) M. Andersen	Quantum Resonances in a Bose-Einstein Condensate
23. (B) Jean S. Stephens	Development of In Situ Imaging Capabilities to Investigate Cell/Scaffold Interactions in Tissue Engineering Constructs
24. (B) Johanna Camara	A Nucleotide Switch as the Predominant Mechanism Preventing Re-initiation of DNA Replication in <i>Escherichia coli</i>
25. (P) James L. Hanssen	Laser Cooled Atoms as a Focused Ion Beam Source
26. (M) Zuzanna T. Cygan	Microfluidic Platform for the Generation of Polymer Colloids
27. (P) W. Ratcliff	Magnetic Phase Diagram of the Giant Magnetoelectric, DyMn <sub>2</sub> O <sub>5</sub>
28. (P) Daniel S. Hussey	Coded Source Imaging: Initial investigations with visible light and thermal neutrons
29. (P) Wangchun Chen	Polarized <sup>3</sup> He spin filters for neutron scattering
30. (P) Ana Jofre	Transport and Confinement of DNA within Polymer nano-tubes
31. (C) Jennifer M. Keller	Emerging contaminants in loggerhead and Kemp's ridley sea turtles from the southeastern coast of the U.S.
32. (P) Hans Pieter Mumm	The emiT Experiment: A Search for Time-reversal Invariance Violation in Neutron Beta Decay
33. (C) Ha-Jin Lee	Chemical Functionalization of Carbon Nanotubes by Metallization/Coordination
34. (B) James A. Cooper Jr.	Engineered Cartilage Development using Pulsatile Bioreactors: Influence of Fluid Stress on Matrix Production
35. (B) Brandon M. Vogel	Parallel Synthesis and High-Throughput Characterization of Polyanhydride Random Copolymers for Controlled Drug Delivery Applications
36. (C) J. Christopher Ball	Cell-Based Fluorescence In Situ Hybridization Using Semiconductor Nanocrystal Probes in a Microfluidic Channel
37. (P) Neil A. Anderson	Sum-Frequency Study of Biomolecular Structure at Interfaces
38. (B) Nancy J. Lin	Effects of Bis-GMA/TEGDMA Vinyl Conversion Levels on Cellular Response: A Combinatorial Approach
39. (P) Erge Edgu-Fry	Fusion of Giant Unilamellar Liposomes
40. (P) C. Fertig	Neutral Atoms in an Optical Lattice for Quantum Information Processing
41. (B) Alice Crawford	Single Molecule Detection in Optically Trapped Nanocontainers
42. (M) Babak Nikoobakht	A New Approach for Fabricating Nanowire Based Devices: Platforms for Nanoscale Metrology
43. (B) Tithi Dutta Roy	<i>In Vivo</i> Characterization of 3D Bone Repair Scaffolds with Controlled Architectures Fabricated Via Rapid Prototyping Techniques

Fields: Biotech/Biol (B), Chem (C), Eng (E), Matls Sci (M), Phys (P), Math/Stat (MS)

#. (Field) Presenter	Poster Title
44. (M) Carlos J. Martinez	Engineering of Porous, Tin Oxide Nanoparticle Microshells for Sensor Applications
45. (C) Cynthia S. Lo	Density Functional Theory Investigations on the Structure and Reactivity of Aqueous Hematite ( $\alpha$ -Fe <sub>2</sub> O <sub>3</sub> ) Surfaces
46. (C) Brian Hutchison	Photopolymerizations for Micro- and Nanofluidics
47. (M) T. W. Kee	Rapid Biological and Chemical Imaging using Broadband CARS Microscopy
48. (M) Hyun Wook Ro	Nanoporous PMSSQ-based spin-on-glass films for ultra-low-dielectric thin film applications
49. (P) Idan Manelbaum	Surface Enhanced Raman Spectroscopy of Biomolecules Encapsulated in Liposomes
50. (P) R. Dumke	Measuring Atom-Molecule Superposition States
51. (M) Shuhui Kang	Analysis of Poly(lactic acid) Amorphous Chain Structure Associated with Crystallization and Deformation Behavior
52. (P) Owen P. Vajk	Magnetic Order and Spin Dynamics in Ferroelectric HoMnO <sub>3</sub>
53. (M) Vanessa Kate Peterson	Using Quasielastic Neutron Spectroscopy to Investigate Cement: Special Interactions of Tricalcium and Dicalcium Silicate during Hydration
54. (C) Marc C. Gurau	A Combined Optical Approach to Structural Determination of Semi-Conducting Polymer Thin Films
55. (B) Samuel P. Forry	Culturing Neural Cells for Microfluidic Networks
56. Michael A. Forbes*	Capacitated Vehicle Routing and the $k$ -Delivery $n$ -Traveling Salesman Problem
57. Abigail A. Fraeman*	Modeling the Distribution of Comets Around the Star IRC +10216
58. Sherri Y. Geng*	Automated Seizure Detection Using Statistical Analysis of EEG Time-Domain Signals
59. Justin A. Kovac*	The Effects of Warm Core Rings on Hurricane Intensification in the Gulf of Mexico

*\*Finalist, 2005 Intel Science Talent Search (Montgomery Blair High School)*

Fields: Biotech/Biol (B), Chem (C), Eng (E), Matls Sci (M), Phys (P), Math/Stat (MS)

# The 12th Annual NIST Sigma Xi Postdoctoral Poster Presentation

**11 am to 3 pm, Thursday, February 24, 2005**  
Hall of Flags, Building 101

~~ Refreshments will be served ~~

**Author, poster number**

Andersen 22	Forry 55	McDaniel 14
Anderson 37	Fraeman 57*	Mihailescu 12
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Crain 16	Kang 51	Sheng 10
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Curtis 19	Keller 31	Souryal 17
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*\*Finalist, 2005 Intel Science Talent Search (Montgomery Blair High School)*

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